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port, namely, the white with palest possible blue-gray tinge, and the definitely light blue type. In this set one egg appears almost pinkish as to ground, by reason of the diffusion of red markings, and the probable warming effect of the contents. The more pronounced type is of the palest niagara green; while the markings of both are of ochre red and prussian red.

These six sets of eggs reposing in nests "taken with the bloom on", now occupy an entire drawer in the collection of the Museum of Comparative Oology. Only one of those who gaze upon them is able to recall a flood of delightful memories (Bert alas! is exiled at Santa Cruz); but with these authoritative trophies for a text the Director will be able to point out to hundreds of others something of the "meaning of things", and to fill the minds of strangers with a sharp unrest until they too have heard the Solitaire sing on Shasta.

Santa Barbara, California, December 1, 1918.

NESTING OF THE SHORT-EARED OWL IN WESTERN WASHINGTON

By E. A. KITCHIN

WITH FOUR PHOTOS BY E. A. KITCHIN AND J. H. BOWLES

IT HAS heretofore been an unsettled subject, though much discussed among the bird men of this vicinity—that of the local nesting of the Short-eared Owl (*Asio flammeus*). Though the birds are common in the fall and winter, no records had been established of their breeding here.

Our Tacoma tide-flats cover several square miles of territory. Through the center runs a road that acts as a dyke, keeping out the tide that at one time covered nearly all this region, especially in the winter when the highest tides occur. Deep sloughs that twist and turn, intersect this whole section and act as channels for the waters of the incoming and outgoing tides. In the winter the Short-eared Owls are generally flushed from the edges of these sloughs where they hide most of the day, under some over-hanging grass or weeds.

Judging from various descriptions of nesting locations east of the Cascades, the proper places to search seemed to be where the grass or cover was long enough to afford good concealment for the large clutch of white eggs. I knew a sixty-acre tract on our flats answering this description, lying well above the summer tides. Last year I worked back and forth over this ground, using up several precious Sundays, but failed to locate a nest or even to flush a bird; and were it not for the fact that on one certain afternoon I saw two pairs of owls skimming back and forth in search of food, I would not have tried again. Firmly convinced that they did not use this heavily grassed section, I resolved this year to try the edges of the sloughs, their habitation in the winter months, the result being that two nests were found and photographs and records made.

My first effort this year (1918) was on May 6. Securing a stick about eight feet long, I traveled up the side of one slough and then down the other, keeping the length of the stick from the edge, and after about two hours of this was rewarded by flushing the owl from her "nest and four". When she jumped she scattered three of the eggs out of the nest but none was broken. The nest was placed in a very open position and the eggs could be seen sixty feet away. A

slight excavation scratched in the hard ground and lined with a few short stalks of coarse grass, was all the material used or work done. The coloring of the bird on the nest so blended with the surrounding grass, that one had to get very near to distinguish her. When flushed she did not remain near the nest, but departed, with a small army of Red-winged Blackbirds in pursuit. A visit two hours afterward found her back on the eggs, where she was left undisturbed.

Though we did not collect any of the parent birds, I am taking it for granted that it was the female that was always on the nest; we generally flushed the male from his own little den nearby.

The next day, accompanied by Mr. J. H. Bowles, I again visited the nest, flushing the bird at about twenty-five feet. We found the eggs "pipped" so, after taking several photographs, we beat a hasty retreat as there was a cold north wind blowing and the eggs needed protection. Careful examination of the nest and vicinity failed to reveal any remains of food, nor were there feathers



Fig. 6. TIDAL MARSH NEAR TACOMA. THE EDGES OF THESE SLOUGHS ARE USED AS HIDING PLACES AND NESTING SITES BY THE SHORT-EARED OWL.

of any kind in the nest. I am mentioning this as we found a different condition a week later.

We then "roped" another section of the flats and were rewarded by flushing a bird off her nest, which contained three eggs. These eggs were also "pipped", and the nest lay in the same exposed position as the former one and at about the same distance from the edge of a slough. The ground here was not quite so hard and there were four or five dead weed stalks for a back-ground. The male jumped less than a hundred feet away. Both birds left at once and were not seen again while we were in the vicinity.

On May 18, a week later, I paid my next visit, accompanied by Mr. Stanton Warburton, Jr. Visiting the first nest, we found the bird upon it. Only two

young occupied the nest, and they were rudely spilled out when the old bird left. One was big and strong, but the other was very small and weak. The larger bird snapped his bill in true owl fashion. There were no remains of the other two eggs, but we strongly suspect a crow had something to do with their disappearance, as four white eggs, exposed, can be seen from quite a distance, and this section is a common flyway of crows.

There were no signs of food about the nest, except a quantity of small bird feathers, which startled us somewhat, as we never had cause to suspect these owls of preying upon birds of any kind. The wing of a Lutescent Warbler was easily recognized, and there were plenty of feathers of either the Russet-backed or the Alaska Hermit Thrush, as well as those of the Western Meadowlark. The male bird was not seen on this trip and the female left at once.

Visiting nest number two, we found that all three eggs had hatched, and it contained two large owlets and one little fellow several days younger. The nest

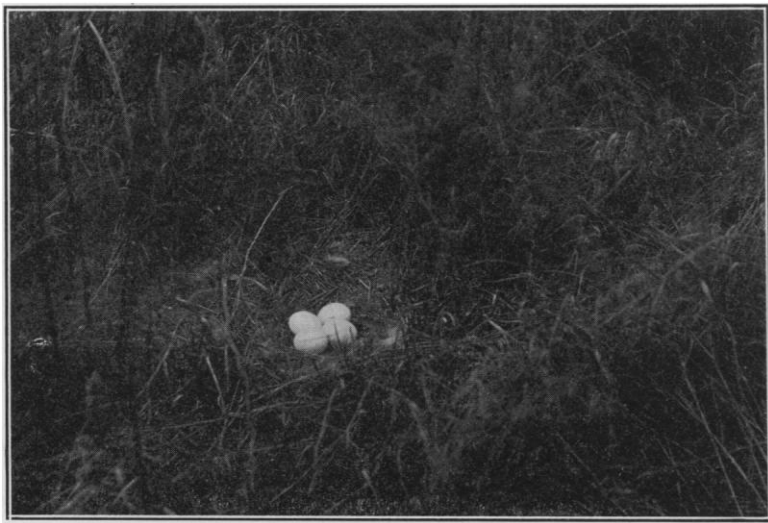


Fig. 7. NEST AND EGGS OF SHORT-EARED OWL. THE FIRST SET FOUND.

Photo by J. H. Bowles.

also held a headless mouse, and a quantity of bird feathers. We identified the Lutescent Warbler, likewise thrush feathers and some undoubtedly of the Western Savannah Sparrow. The female allowed a nearer approach than before, about fifteen feet, and hovered over our heads at a distance of perhaps a hundred yards.

We were here treated to a most ridiculous performance by the male bird. While watching the female we suddenly heard an awful groaning and chuckling sound behind us. This was the male and he was mad clear through, darting back and forth and uttering these awful sounds. Finally, he could stand it no longer and literally dove into a bunch of high weeds, where he twisted and turned, and to watch the tops of the weeds one would think that nothing less than a death struggle was going on. Finding this would not decoy us he joined his mate, and they circled overhead, while we took several snap shots and departed.

My next visit was on May 25, one week later. I visited the first nest, but

found no trace of either the two young birds or the old ones; no trace of any recent feeding nor signs of habitation in or about the nest. Of course we do not know what became of them, but feel certain that the old birds had carried their offspring to a new location, as the young were much too small and weak to fly or even to stand up. Leaving the nest, I had not proceeded more than a hundred feet when up jumped a Pintail from her nest and nine eggs, showing that ducks at least are not afraid of Short-eared Owls. But fancy a duck neighboring with cousin "Great Horned"!

Proceeding to the second nest I advanced very quietly, as I wanted to approach it without being seen. This bird seemed to show more care for her young than the other one, and I was very anxious to observe, if I could, just what was going on "at home", nor was I disappointed. During the day it had been very hot and close for this region, but a distant thunder storm had suddenly created a strong cold wind that blew sharply across the flats. Crawling up behind an old



Fig. 8. SAME NEST AS IN FIG. 7. YOUNG ONE WEEK OLD.

log, I peered over the top. The parent bird was lying somewhat sideways, with one wing uplifted, protecting her babies from the cold wind. The three little ones were cuddled up close to the mother bird, reminding one of an old cat with her kittens. What a chance for a real photographer! I tried to get a picture, but the old bird took alarm before I could get near enough. Examination of the nest showed no signs of food other than fresh, tell-tale feathers, which were again in evidence. The little ones, over three weeks old, were still in their downy state, although pin feathers were sticking through. They were still too weak to stand, and lay in a helpless group snapping their bills. Neither of the old birds came near while I remained.

June 1 was the date of my next and final visit. I approached quietly, and was greatly disappointed in finding the nest empty and the birds gone. A careful search for over two hours, up and down and around the nest, failed to dis-

close either young or old birds, nor did the nest look as if it had been occupied for several days. It seemed almost certain that the old birds had carried off the young, perhaps on account of my weekly visits, probably to a new hunting ground. The only thing I am sure about, however, is that the young birds did not fly themselves, as their wings could not have been feathered enough, nor had they the strength. This nest was on what was practically an island formed by the sloughs so that no passerby could have been within several hundred yards of it.

In summing up briefly the knowledge gained by my visits to this owl's nursery, certain items stand out prominently. These are the small sets laid, appar-



Fig. 9. SECOND NEST FOUND. YOUNG THREE WEEKS OLD.

Photo by J. H. Bowles.

ently, by the owls on this side of the mountains, the open sites selected for nesting, and the fact of the parent birds catching and feeding small birds to their young. I hate to accuse them of this, but the truth must come out. Another very striking thing was the manner of flight of the parent birds at times after the young were hatched. They would fly to a height of perhaps a quarter of a mile overhead and then sail about on motionless wings, precisely like a Buteo. A casual observer would never have suspected for a moment that they were owls. Altogether, while no specimens were added to the collection, a most interesting fund of information was gathered for our note books.

Tacoma, Washington, August 3, 1918.